

PATENT  
ATTORNEY DOCKET NO: 04005/013003

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled Transgenic Animals That Produce Human Hemoglobin, the specification of which

is attached hereto.  
 was filed on October 30, 1997, as Application Serial No. 08/961,443.  
 was described and claimed in PCT International Application No. \_\_\_\_\_  
filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_.

state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information I know to be material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

Country	Serial Number	Filing Date	Priority Claimed?
			Yes/No
			Yes/No
			Yes/No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose all information I know to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

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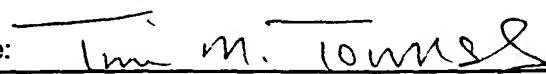
Serial Number	Filing Date	Status
08/934,385	September 19, 1997	
08/888,433	July 7, 1997	
08/611,542	March 6, 1996	

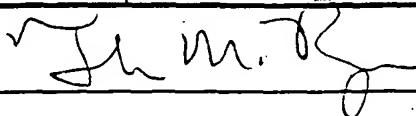
I hereby appoint the following attorneys and/or agents to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Paul T. Clark, Reg. No. 30,162, Karen L. Elbing, Reg. No. 35,238, Kristina Bieker-Brady, Reg. No. 39,109, and Evelyn D. Shen, Reg. No. 39,834.

Address all telephone calls to: Karen L. Elbing at 617/428-0200.

Address all correspondence to: Karen L. Elbing at Clark & Elbing LLP, 176 Federal Street, Boston, MA 02110.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Full Name (First, Middle, Last)	Residence Address (City, State, Country)	Post Office Address (Street, City, State, Country)	Citizenship
Tim M. Townes	4033 N. Cahaba Drive Birmingham, AL 35243		USA
Signature: 	Date: 1-14-98		

Full Name (First, Middle, Last)	Residence Address (City, State, Country)	Post Office Address (Street, City, State, Country)	Citizenship
Thomas Ryan	1000 18 <sup>th</sup> Street S. Apartment 6 Birmingham, AL 35205		USA
Signature: 	Date: 1-14-98		

**COMBINED DECLARATION AND POWER OF ATTORNEY**

Full Name (First, Middle, Last)	Residence Address (City, State, Country)	Post Office Address (Street, City, State, Country)	Citizenship
Dominic Ciavatta	2030 11 <sup>th</sup> Avenue S. Apartment #5 G Birmingham, AL 35202		USA
Signature: <i>Dominic Ciavatta</i>			Date: 1/14/98

**ATTORNEY DOCKET NO. 05118.0007U4  
PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of )  
 )  
 Townes et al. ) Group Art Unit: 1632  
 )  
 Serial No.: 08/961,443 ) Examiner: Martin, J.  
 )  
 Filed: October 30, 1997 )  
 )  
 For: TRANSGENIC ANIMALS THAT )  
 PRODUCE HUMAN HEMOGLOBIN )

**REVOCATION AND SUBSTITUTE POWER OF ATTORNEY**

Assistant Commissioner for Patents  
Washington, D.C. 20231

NEEDLE & ROSENBERG, P.C.  
Suite 1200, The Candler Building  
127 Peachtree Street, N.E.  
Atlanta, Georgia 30303-1811

March 16, 2001

Sir:

The UAB Research Foundation hereby revokes all powers of attorney heretofore given by it and  
appoints as its attorneys:



NEEDLE & ROSENBERG, P.C.,  
Suite 1200, The Candler Building  
127 Peachtree Street, N.E.  
Atlanta, Georgia 30303-1811  
(404) 688-0770

with full power of substitution, association and revocation, to prosecute said application and to transact  
all business in the Patent and Trademark Office connected therewith.

ATTORNEY DOCKET NO. 05118.0007U4  
SERIAL NO. 08/961,443

Address all telephone calls to David G. Perryman, at telephone number (404) 688-0770.

Address all correspondence to:

David G. Perryman, Esq.  
NEEDLE & ROSENBERG, P.C.  
Suite 1200, The Candler Building  
127 Peachtree Street, N.E.  
Atlanta, Georgia 30303-1811

The UAB Research Foundation

By: Carol Augsburger

Typed name: AROLYN R. AUGSBURGER

Title: VICE President

Date: \_\_\_\_\_

APPROVED FOR SIGNATURE  
BY OFFICE OF COUNSEL

✓  
DATE 04/27/2001

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## ASSIGNMENT

For valuable consideration, we,

Full Name of Assignor	City	State (and Country if not USA)
Tim M. Townes	Birmingham	Alabama
Thomas Ryan	Birmingham	Alabama
Dominic Ciavatta	Birmingham	Alabama

hereby assign to:

Full Name of Assignee	State of Incorporation	Business Address
The UAB Research Foundation	Birmingham	1825 University Boulevard Mortimer Jordan Hall #113 University of Alabama at Birmingham Birmingham, AL 35294

and to its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the inventions and improvements which are subject of one or more applications for United States Patent signed by us, identified as:

Title of Application	Filing Date	Serial Number
Production of Human Hemoglobin in Transgenic Animals	March 6, 1996	08/611,542
Production of Human Hemoglobin in Transgenic Animals	July 7, 1998	08/888,433
Production of Human Hemoglobin in Transgenic Animals	September 19, 1997	08/934,385
Transgenic Animals That Produce Human Hemoglobin	October 30, 1997	08/961,443

This assignment including said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in my name or in its own name for patents, utility models, design registrations and like rights of exclusion, and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal

representatives and assigns, without further compensation, to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

IN WITNESS WHEREOF, I hereto set my hand and seal at 845 19th Street S/Birmingham, AL this 7<sup>th</sup> day of Jan., 1999 35294

Tim Townes

L.S.

Tim M. Townes

STATE OF Alabama:

:ss.

COUNTY OF Jefferson:

Before me this 7<sup>th</sup> day of Jan, 1999; personally appeared Tim M. Townes known to me to be the person whose name is subscribed to the foregoing Assignment, and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Tim Townes  
Notary Public

My Commission Expires: 4-26-94

[Notary's Seal Here]

IN WITNESS WHEREOF, I hereto set my hand and seal at 845 19TH STREET So., this 7<sup>th</sup> day of JAN., 1999

Thomas Ryan

L.S.

STATE OF Alabama:

:ss.

COUNTY OF Jefferson:

Before me this 7 day of Jan, 1999; personally appeared Thomas Ryan known to me to be the person whose name is subscribed to the foregoing Assignment, and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Thomas Ryan  
Notary Public

My Commission Expires: 4-27-94

[Notary's Seal Here]

IN WITNESS WHEREOF, I hereto set my hand and seal at 845 19<sup>th</sup> Street South,  
this 8<sup>th</sup> day of January, 1999

Dominic Ciavatta \_\_\_\_\_ L.S.  
Dominic Ciavatta

STATE OF AIR RAID:

:ss.

COUNTY OF Jefferson:

Before me this 8<sup>th</sup> day of Jan, 1999 personally appeared Dominic Ciavatta known to me to be the person whose name is subscribed to the foregoing Assignment, and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Jerry Johnson  
Notary Public

My Commission Expires: 4-24-99

[Notary's Seal Here]